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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,826	10/20/2004	Hiroshi Uehara	018765-184	8838

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EXAMINER	
CHOI, LING SIU	
ART UNIT	**PAPER NUMBER**
1713	

DATE MAILED: 01/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/511,826	UEHARA ET AL.	
	Examiner	Art Unit	
	Ling-Siu Choi	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11 and 13-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11 and 13-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the Amendment filed October 12, 2005. Claims 1-10 and 12 were canceled and claims 11 and 13-21 are now pending. The following rejections are based on the new ground. Thus, this Office Action is made as a second non-final one.

Claim Objections

2. Claims 11 and 13-21 are objected to because of the following informalities: (a) **Claim11**, line 14, "a grafted-modified product of unsaturated carboxylic acid" is suggested to be changed to --a grafted-modified product with unsaturated carboxylic acid-- and (b) **Claim 16**, lines 6-7, "alcohol wherein the amounts of (BB), (E) and (F) are based on 100 parts by weight of (AA)." is suggested to be changed to --alcohol.--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. **The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

> **(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.**

4. Claims 11 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (US 6,232,377 B1).

<table>
<tr><td colspan="4">A thermoplastic resin composition (Y) comprising</td></tr>
<tr><td rowspan="3">A</td><td rowspan="3">20-64.9 wt%</td><td rowspan="2">ethylene copolymer</td><td>(A-1) ethylene/a-olefin copolymer comprising ethylene and C_{3-10} α-olefin</td></tr>
<tr><td>(A-2) ethylene polymer other than A-1</td></tr>
<tr><td colspan="2">weight ratio of (A-1)/(A-2) = 20/80 to 100/0</td></tr>
<tr><td>B</td><td>35-70 wt%</td><td colspan="2">metal hydroxide</td></tr>
<tr><td>C</td><td>0.1-30 wt%</td><td colspan="2">graft-modified ethylene polymer</td></tr>
<tr><td colspan="4">wherein the ethylene/α-olefin copolymer (A-1) has the following properties:</td></tr>
<tr><td>i</td><td colspan="3">density = 857- 890 kg/m^3</td></tr>
<tr><td>ii</td><td colspan="3">melt flow rate (MF_2) = 0.1-100 g/10 min</td></tr>
<tr><td>iii</td><td colspan="3">Mw/Mn =1.5-3.5</td></tr>
<tr><td colspan="4">the graft-modified ethylene polymer (C) is an ethylene/ C_{3-10} α-olefin copolymer graft-modified with unsaturated carboxylic acid or a derivative thereof in 0.01-10 wt%, the ethylene/ C_{3-10} α-olefin copolymer having the following properties:</td></tr>
<tr><td>i</td><td colspan="3">density = 857- 890 kg/m^3</td></tr>
<tr><td>ii</td><td colspan="3">melt flow rate (MF_2) = 0.1-20 g/10 min</td></tr>
<tr><td>iii</td><td colspan="3">Mw/Mn =1.5-3.5</td></tr>
</table>

(summary of claim 1)

Hayashi et al. disclose a composition comprising (A) about 50-95 wt% of at least one ethylene copolymer, (B) about 5-50 wt% of an ethylene/α-olefin copolymer, (C) about 2-50 parts by weight of a polyethylene modified with a functional group containing compound, (D) about 5-250 parts by weight of a metal hydroxidde, (E) about 1-12 parts

by weight of a triazine ring containing compound, and (F) about 0.5-5 parts by weight of a flame retardant compound, wherein the amounts of (C) -(F) are based on 100 parts by weight of component (A) and component (B) combined and wherein the ethylene/α-olefin copolymer has a melt flow rate of about 0.5-50 g/10 min; a density of 0.860-0.935 g/cm^3; and a Mw/Mn of up to about 3 (col. 5, lines 6-24; col. 6, lines 42-65; claim 1).

The difference between the present claims and the disclosure of Hayashi et al. is the requirement of a polyethylene having specific properties to be modified with a functional group containing compound.

Hayashi et al. further disclose that the modified polyethylene has a melt flow rate in the range of about 0.1-50 g/10 min and a density in the range of 0.860 to 0.950 g/cm^3 (col. 5, lines 63-67). Attention is also directed to lines 5-7 of column 10, wherein component C is maleic anhydride modified ethylene/1-hexene copolymer and has a melt flow rate of 1.0 g/10 min and 0.4 % by weight of maleic anhydride. Hayashi et al. further disclose that "[g]enerally, any polyethylene resin can be used in the modification, e.g., ..., and ethylene/α-olefin copolymers polymerized by using **single site catalyst**" (col. 5, lines 25-32), which implies that the ethylene/α-olefin copolymers would have narrow molecular weight distribution. A conclusion can then be drawn that Hayashi et al. do fairly suggest that the polyethylene having the claimed properties would be modified with a functional group containing compound. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a polyethylene having the claimed properties for modification and thereby obtain the present invention.

5. Claims 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manabu et al. (JP 08-176343).

A polymer composition(Z) comprising		
AA	100 parts by weight	at least one thermoplastic polymer (aa1) or at least one thermosetting polymer (aa2)
BB	50-250 parts by weight	a metal hydroxide
E	0.1-40 parts by weight	a triazine ring containing compound
F	0.1-40 parts by weight	a polyhydric alcohol

(summary of claim 16)

Manabu et al. disclose a composition comprising (A) 100 parts by weight of resin, (B)10-25 parts by weight of ammonium polyphosphate, (C) 1-15 parts by weight of a compound containing polyhydric hydroxy group, (D) 1-10 parts by weight of a compound containing the triazine ring such as melamine, and (E) 0.1-5 parts by weight of metallic hydroxide such as magnesium hydroxide (abstract).

The difference between the present claims and the disclosure of Manabu et al. is the requirement of the specific amount of metal hydroxide to be used in the present invention.

It is noted that metal hydroxide is attributed to the flame retardant properties of the composition in which the metal hydroxide has been added. The case law held that "A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation." ***In***

re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to achieve the claimed amount of the metal hydroxide by the routine optimization and thereby obtain the present invention.

6. Claims 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kensho et al. (JP 09-221567).

Kensho et al. disclose a composition comprising polyolefin resin, 1-30 wt% polyammonium phosphate compound (A), 0.1-30 wt% amine phosphate (B), 0.1-30 wt% nitrogenous compound (C), and 0.1-20 wt% of polyhydric alcohol (D), wherein the total amount of components A, B, C, and D is 10-50 wt% based on the entire composition (abstract; [0019],[0035]). Kensho et al. further disclose that a metal hydroxide can be added into the composition ([0038]).

The difference between the present claims and the disclosure of Kensho et al. is the requirement of the specific amount of metal hydroxide to be used in the present invention.

It is noted that metal hydroxide is attributed to the flame retardant properties of the composition in which the metal hydroxide has been added. The case law held that "A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation." ***In re Antonie***, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). Thus, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to achieve the claimed amount of the metal hydroxide by the routine optimization and thereby obtain the present invention.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.

LING-SUI CHOI
PRIMARY EXAMINER

December 20, 2005